Pollution Prevention Handbook

Food Services/Convenience Stores

No. 17 in a Series of Fact Sheets.

Department of the Interior

Office of Environmental Affairs (OEA)

Although you may not realize it, many of the activities that take place at your facility may pollute the environment and waste money. A facility such as yours can become more environmentally friendly and cost efficient by reducing the amount of waste generated. Everyone is interested in doing his/her part to protect the environment, and simple steps such as recycling paper products and used oil properly can help. Growing numbers of facilities are becoming aware of the environmental harm their operations may cause and are making a commitment to reduce waste through a series of steps commonly known as pollution prevention.

Pollution prevention is the use of materials, processes, or practices that reduce or eliminate the quantity and/or toxicity of wastes *at the source of generation*. Pollution prevention is a *multimedia* approach that minimizes or eliminates waste released to land, air, and/or water without simply shifting pollutants from one media to another. The Department of the Interior (DOI) considers source reduction to be the most preferred environmental management technique for dealing with a waste generation problem. In addition, pollution prevention is often the most cost-effective means to reduce environmental and health risks associated with waste. Pollution prevention is often cost effective because it may reduce raw material losses; reduce reliance on expensive "end-of-pipe" treatment technologies and disposal practices; conserve energy, water, and raw materials; and reduce the potential liability associated with waste generation. The Pollution Prevention Act of 1990 makes pollution prevention a national policy for environmental management.

For wastes that cannot be reduced at the source, DOI recommends that generators consider recycling as the next best option. Wastes that cannot be reduced at the source or recycled should be stored, treated, and/or disposed in accordance with all applicable waste management regulations. Wastes should be disposed safely to minimize adverse impacts on the environment.

BENEFITS OF POLLUTION PREVENTION & RECYCLING

Establishing a pollution prevention/recycling program at your facility has many potential benefits for you, your facility, and the environment. Some of these benefits are direct (e.g., cost savings from reduced raw material use), while others are indirect (e.g., avoided waste disposal fees).

PURPOSE OF THIS FACT SHEET

This fact sheet introduces source reduction and recycling options that can start you on the road to eliminating, reducing, or recycling wastes. This fact sheet describes many pollution prevention options that you, as the manager of your facility, may adopt to reduce wastes. The last page of this fact sheet is a list of specific practices and techniques that employees at your facility can take to help implement your pollution prevention/recycling program. The list of pollution prevention tips can be posted in your work area to encourage employees to use environmentally-safe practices.

DEVELOPING A POLLUTION PREVENTION/ RECYCLING PROGRAM

Recognizing the Need for a Pollution Prevention/Recycling Program

The first step is to recognize the need for waste reduction at your facility and secure staff commitment to achieve source reduction and recycling goals. Once you have convinced your staff of the benefits of a pollution prevention/recycling program, use the steps outlined below to help begin designing your program. Each step can be as basic

DEFINITIONS:

Source Reduction: *Reducing or eliminating the quantity and/or toxicity of a waste before it is generated (i.e., at the source).*

Recycling: *Recovering a waste from one process and reusing it in the same process or in another process in an environmentally safe manner.*

or complex as you feel is necessary to meet t environmental goals that you set for your facility

Planning and Organizing

The next step is to plan and organize your pollution prevention program. This involves establishing program goals and objectives, as well as staffing a task force to conduct a pollution prevention "assessment" of the facility.

Conducting a Pollution Prevention Assessment

The goal of a pollution prevention assessment is to identify opportunities at your facility where you can reduce waste generation, emissions, and environmental damage. The assessment can involve collecting process-specific information, setting pollution prevention targets, and developing, screening, and selecting pollution prevention options for further study. Pollution prevention assessments can be extensive process examinations using scientific methodology, or they can be less formal evaluations of waste generation and management practices.

Evaluating Pollution Prevention Options

Once pollution prevention options are identified, evaluate the technical and economic feasibility of each option. These evaluations can help determine which pollution prevention options are most suitable for implementation at your facility. Pollution prevention options range from simple and easy-to-implement techniques to detailed engineering or design changes. The options you choose will depend on your facility's operations, needs, and environmental goals.

Implementing Your Pollution Prevention Program

The final steps in the process are implementation of the pollution prevention program and evaluation of its success. After the program is implemented, an evaluation can increase the overall success of the pollution prevention program by identifying deficiencies that remain. Specifically, the evaluation may identify new assessment targets and additional pollution prevention program options for investigation

If you are interested in obtaining additional reference information about developing and implementing a pollution prevention program at your facility, contact EPA's Pollution Prevention Information Clearinghouse (PPIC) at (703) 821-4800. PPIC is a free service that provides the public with technical, programmatic, and policy references about source reduction and recycling.

We recommend the following documents that discuss pollution prevention program options and waste assessments in greater detail. They are available from PPIC free of charge:

Waste Minimization Opportunities Assessment Manual, U.S. EPA, Hazardous Waste Engineering Laboratory (EPA/625/7-88/003). July 1988. Request PPIC document # WAM-3.

Profiting From Waste Reduction in Your Small Business, Alaska Health Project, 1988. Request PPIC document # WAM-2.

Potential Benefits of Pollution Prevention

To the individual:

- *Eliminating or reducing toxic or hazardous chemicals in the workplace provides a safe, healthy work environment for all employees.*

Waste reduction can:

- *Help your facility to achieve regulatory compliance.*
- *Reduce operating costs by limiting the amount of raw materials, energy, and water used at your facility.*
- *Minimize waste transportation, storage, and disposal fees.*
- *Reduce liability associated with waste handling, storage, and transportation.*
- *Demonstrate DOI's concern about the environment.*

To the Environment:

- *Reducing pollution improves the quality of the environment for everyone.*

Types of Pollution Prevention Techniques and Options

Production Planning and Sequencing — Plan and sequence production to maximize raw materials.

Process or Equipment Modification — Change the process, parameters or equipment used in that process to reduce the amount of waste generated.

Raw Material Substitution or Elimination — Replace existing raw materials with other materials that produce less waste, or a non-toxic waste.

Loss Prevention and Housekeeping — Perform preventive maintenance and manage equipment and materials to minimize opportunities for leaks, spills, evaporative losses and other releases of potentially toxic chemicals.

Waste Segregation and Separation — Avoid mixing different types of wastes. This makes the recovery of wastes easier by minimizing the number of different constituents in any given waste stream.

Closed-Loop Recycling — Use or reuse of a waste as an ingredient or feedstock in the production process on site. Recycling in which a waste is recovered and reused in the same production process on site as an input is a form of pollution prevention.

Training and Supervision — Provide employees with the information and the incentive to minimize waste generation in their daily duties. Train employees to practice proper and efficient use of tools and supplies, and to understand and support the company's pollution prevention goals.

Pollution Prevention/Recycling Checklist

Food Services/Convenience Stores

This checklist is designed to encourage thought on ways you can reduce waste at your facility. By answering the following questions you may identify some easy to implement pollution prevention and recycling options as well as more comprehensive approaches to reducing wastes.

Pollution prevention must be a cooperative effort between government and private industry. The government's function is to set the tone, to point the direction, to research, and to clear away obstacles to pollution prevention. Your job is to implement pollution prevention techniques, like the ones discussed in this fact sheet, at your facility and to work with government agencies in developing and promoting new pollution prevention strategies. DOI encourages lessees, concessionaires, special use permit holders, and contractors who conduct business on DOI lands to embrace pollution prevention in their daily operations.

GENERAL PRACTICES

Q Have you conducted a pollution prevention assessment?

A pollution prevention assessment is a procedure to help you identify waste sources, and identify, evaluate, and implement options to reduce or eliminate wastes. EPA has developed a rigorous waste assessment methodology for use by waste generators. This process is described in the *Waste Minimization Opportunity Assessment*, available from EPA's PPIC. Once a pollution prevention assessment is complete, it should be reviewed periodically to determine if operations or opportunities have changed.

Q Do you have inventory procedures for raw materials?

Strict inventory control is the most effective and cost efficient way to prevent usable materials from needlessly becoming wastes. Improperly stored, labeled, or outdated materials become waste. Routinely check the date of materials to prevent them from outlasting their shelf life. Practice "first-in, first-out" inventory control — use older supplies before new materials.

Q Does your facility segregate its wastes?

Mixing wastes may make recycling and reuse difficult. Haulers generally pay more for segrated recyclable materials because they are easier to process. In some cases haulers may refuse to collect nonsegrated recyclable materials.

SOURCE REDUCTION

Q Have you assessed all source reduction opportunities at your facility?

Whenever possible, waste management problems should be addressed through source reduction. Many single-service materials and supplies can be substituted with durable items to reduce waste, including:

- Reusable linen products such as napkins, table cloths, and towels, rather than single-service paper products.
- Ceramic dishes and metal utensils in place of single-service plastic, paper or styrofoam tableware.

Where reusable items cannot be used, consider using smaller sized disposables such as napkins and paper hand towels.

Q Can you replace toxic cleaning products with a safer substitute?

Many commercial cleaning products contain hazardous materials such as caustics or strong acids. If possible, consider using alternative materials. Several examples are listed in the table on page 4.

Q Do you use phosphate-free biodegradable detergents?

Phosphate is an aquatic plant nutrient that can cause excessive growth of aquatic algae and water quality problems after the detergent is washed down the drain. Ask your supplier about the many phosphate-free biodegradable detergents on the market.

Q Does your facility have a safe and effective pesticide management program?

Integrated Pest Management (IPM) programs combine chemical, cultural, and biological practices into one program to manage pest populations. IPM principles incorporate preventive practices, remedial practices, and economic thresholds, thus reducing the amount of chemicals used by applying pesticides only when necessary and at the minimum

OEA would like to thank the following for their documents that were used to develop this fact sheet:

National Park Service- "Integrated Solid Waste Alternative Program"

Michigan Office of Waste Reduction Services-"Reducing Office Paper Waste"

League of Women Voters - "Recycling Guide"

If you are interested in obtaining additional reference information about recycling, contact EPA's Solid Waste Information Clearinghouse (SWICH) at 1-800-67-SWICH.

SWICH is a free service that provides the public with technical information about source reduction and recycling.

effective rate. DOI strongly supports the use IPM programs and many bureau facilities have ready implemented such plans. Contact your Bureau's Natural Resources Management Division for additional information. Consider implementing these other pesticide management techniques:

- Practice good housekeeping to reduce pest popu lations.
- Control pesticide droplet size and deposition. Uncontrolled deposition may result in over application.
- Ensure that your pesticide application rate is uniform and does not exceed recommended application rates.
- Practice spot application of pesticides; don't spray over an entire area unless treatment is required for the entire area.
- To reduce waste, prepare only the amount of pesticide needed for a job.
- Use less-soluble, less-leachable, less-persistent, and less-toxic pesticides whenever possible.

For more information about safe and effective pesticide management, consult Fact Sheet No. 10 of this series, "Pesticide Management".

Q Do you buy food stuffs in bulk?

Buying products in bulk, rather than smaller sized containers, can reduce the amount of packaging waste and may be more cost effective. Buying bulk food, however, requires planning to ensure adequate use of the larger amount of food. Also use caution when buying bulk products containing toxic or hazardous materials; such products should be bought in quantities that can be used within a year to avoid disposal of excess or expired waste.

RECYCLING

Q Are you aware of all the different types of materials that can be recycled?

When source reduction is ot possible or practical recycling is the next best a rnative. The following ems are ommonly recyc

- Offic pape
- Newspaper
- Corrugated ca oan
- Glass
- Aluminum
- Pl
- Tin and bimetal cans
- Wooden pallets
- Food Waste
- Kitchen grease

Office Paper

Office paper is typically divided into two grades: high-grade paper and mixed paper. High-grade paper is a specialized and particularly "clean" grade of office paper which typically consists of white and off-white paper, such as:

- Computer paper
- IBM cards
- Bond copier paper
- Tablet paper
- Notepad or scratch paper
- Plain envelopes
- Letterhead
- Stationery
- Typing paper

Carbon paper, glossy paper, heavily-inked paper, tape, plastic-coated paper, cardboard, newsprint, and similar items are contaminants that cannot be incorporated into high-grade recycled products. These materials should be segregated from high-grade material and may be recycled separately.

Mixed paper is a collection of several grades of paper. There is a demand for recycled mixed paper in the manufacture of consumer tissue products. Mixed office paper can include nearly all paper generated in an office, and may even include limited amounts of:

- Colored paper
- Business forms
- Manila folders
- Window envelopes
- Envelopes with pressure-sensitive adhesive flaps

arbo paper

Safer Alternatives to Toxic Materials

Ammonia-based cleaners	Use a mixture of 1 part white vinegar to 4 parts water.
Drain cleaners	Flush drain with boiling water, pour in 1/4 cup baking soda followed by 1/4 cup vinegar.
Powdered cleaners	Use baking soda.
Floor and tile cleaners	Use 1 Tbsp. borax bleach dissolved in 1 gallon of hot water.
Deodorizer	Use baking soda in the bottom of trash cans to absorb odors.
Toilet cleanser	Use borax bleach and a brush.
Rat and mouse poison	Use traps.

From the White House (October 31, 1991):

Federal agencies and facilities must initiate programs to promote cost effective waste reduction and recycling of reusable materials.

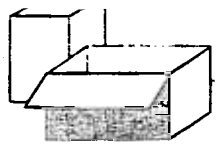
Agencies that generate energy from fossil fuel systems must, whenever possible, begin to use energy or fuels derived from solid waste as their primary or secondary energy source.

Agencies are required to adopt "environmentally-affirmative" procurement programs that will enhance Federal procurement of products made from recycled and recyclable materials.

In addition to required standards, agencies are encouraged to participate in the development of voluntary, environmentally sound, and economically efficient waste reduction, recycling, and procurement standards.

Check with your recyclir contractor before cluding these materials in ɔur mixed paper re cling bins.

Corrugated Cardboard



Because cardboard is so bulky, its removal from the waste stream can dramatically reduce waste collection, hauling, and disposal costs. Eliminating cardboard from the waste stream will enable you to reduce the number of pickups or the number of waste dumpsters needed. There are several approaches that your facility can take to facilitate reuse and recycling of corrugated cardboard:

- Prepare cardboard for recycling by flattening boxes and tying them together for pickup.
- Remove contaminants which interfere with the cardboard remanufacturing process. These may include polystyrene foam and other non-soluble materials, waxed cardboard, wet cardboard, plastic and steel strapping, and shrink wrapping.
- Determine whether or not suppliers will backhaul cardboard.

Glass

Glass is typically separated by color (clear, green and brown) before being recycled. Your facility should separate different color glass into individual containers. Many recyclers, however, will accept mixed glass - check before you establish separate recycling bins. While broken glass and paper labels are both acceptable, most glass brokers will require that the glass be clean and free of contaminants, such as metal caps, ceramics, rocks, and dirt.

Aluminum

Aluminum cans, aluminum foil, and pie pans are all sources of recyclable aluminum. Because these materials are of different grades, the recycling coordinator should check with the buyer to determine specific separation requirements.

Plastic

Plastics recycling is a relatively young industry, but as processing technologies are developed, plastics recycling is expected to expand. Center your recycling efforts on polyethylene terephthalate (PET), which is used for soda bottles, and high density polyethylene (HDPE), which is used for milk jugs. Mixed, or commingled, plastics are combinations of several plastic resins and contaminants, and are used to make items such as simulated wooden park benches, trash containers, and car stops.

Kitchen Grease

Commercial recycling companies often provide collection containers and pick-up service for used kitchen grease. The collected grease can be processed and reused. By avoiding disposal of kitchen grease down the drain, you will also minimize clogging of plumbing. Consult your commercial food supplier or the telephone book for rendering contractors.

Composting

DOI encourages responsible composting, a form of recycling, as a more desirable way to manage some types of food service wastes that would otherwise be disposed of in landfills or incinerated. Composting is the controlled natural breakdown or degradation of organic material by microorganisms. Compost, the material produced from composting, is a superior soil conditioner or mulch suitable for most landscaping and gardening uses. Composting of food waste is being done on a variety of levels, ranging from individual households to centralized facilities serving an entire community. Composting food waste, however, can cause sanitation and animal pest problems. Strict control and management of food waste composting can negate any sanitation or pest problems. Most organic materials are acceptable for composting, including:

Egg Shells	Fruit & Vegetable Scraps
Coffee Grounds	Garden Waste
Paper	Fireplace Ashes
Shredded Brush	Leaves

Grass Clippings (Non-pesticide Treated)

Non-organic material (e.g., styrofoam, metal), and plastic are not suitable for composting. Some organic material should not be composted because it attracts pest animals, causes obnoxious odors, or can contaminate or harm the beneficial microorganisms in the compost pile. Organic materials that should not be composted include:

- Meat or Bones
- Fatty Foods (Cheese, Oil, Grease)
- Diseased Plants
- Plants Treated With Weed-Killer
- Pet Waste

BEFORE YOU START: Composting is regulated in some areas, particularly if it is a large composting operation. If you are unsure if composting is regu-

lated in your area check with your state or local government agency before you begin composting. Additional information on composting is available in Pollution Prevention Handbook Fact Sheet No. 8, "Composting".

Animal Feed

Food waste can often be processed and used as animal feed. County agricultural extension agents may be aware of farmers in your area that are interested in using food waste as animal feed. Contact your state health department about restrictions or necessary precautions prior to taking action.

Other Strategies

Q Have you considered implementing other recycling strategies at your facility?

- Compact or bale recyclable materials on site.
- Compost leaves, grass clippings, and saw dust when practical.
- Reuse magazines, newspapers, and other reading material left by customers by placing them in the employee break room or cafeteria or at the front desk. Books may also be donated to local libraries.
- Use broken wooden pallets as fire wood.
- Serve untouched food left over from banquets or catering at the employee cafeteria or, where feasible, to homeless organizations instead of throwing it away.
- Give slightly damaged or worn durable goods such as used table cloths and tableware to charity organizations.

CONSERVATION

Q Have you conducted an energy audit for your facility?

Complete an energy audit to help determine ways to help conserve energy and cut energy expenditures. Contact your local utility or the Public Service Commission about energy and water conservation tips or for an on-site audit. You might implement the following methods to reduce energy consumption:

- Install energy efficient light bulbs
- Install motion-sensitive lights
- Turn off lights at the end of the evening
- Turn off machines not in use
- Install programmable thermostats

Q Are water use and leaks kept to a minimum?

Regularly checking water faucets and other outlets can help to reduce the amount of water used at your facilities. Try the following ways to reduce water consumption:

- repair or replace leaky water faucets
- turn off water faucets and hoses when not in use
- install low volume toilets
- install low flow shower heads and faucets

A simple water conservation step is to serve water only to guests who request it rather than as a standard service. Limiting water service will also reduce the number of glasses that need to be washed.

DEVELOPING A RECYCLING PROGRAM

Q Is there a recycling coordinator at your facility?

The recycling coordinator is responsible for doing necessary research, designing the recycling program, implementing and managing the program, and acting as a liaison between management, employees, visitors, and recycling contractors.

Q How can you design the most effective recycling system?

Most recycling programs follow a four-part process. There are, of course, many possible variations of this basic approach:

- The facility recycling coordinator conducts a waste stream analysis to determine which wastes comprise the largest portion of the total waste stream. These wastes should take priority when establishing your facility's recycling program.
- Each person separates recyclables from trash. Use one container for non-recyclable trash and several containers for the recyclables.
- Custodial personnel transport materials from recycling containers to centrally located recycling dumpsters. Store materials in a dry location until collected.
- A designated hauler empties the recycling dumpsters and hauls the materials to a recycling facility.

It is important to regularly monitor and evaluate the recycling system to gauge its successes and failures. You may need to occasionally change your program to accommodate the participants.

Other Successful Recycling Program Tips

Start with a phased approach. Begin recycling one or two materials that are either high volume, such as cardboard, or high weight, such as

Make It Work!

Motivating employees to reduce waste generation is the key to a successful pollution prevention/recycling program. The last page of this fact sheet contains easy-to-follow pollution prevention techniques that may be implemented today. It is designed to be removed from this booklet and posted where employees can see it. By discussing pollution prevention with your employees, you may be happily surprised their suggestions and enthusiasm for reducing hazardous wastes.

glass. Expand the program to include different materials as your employees become familiar with recycling.

- Make it easy on the staff to recycle. Don't add steps and tasks unnecessarily. Place recycling containers at convenient locations such as at waiter stations and by the trash cans.

Q Have you identified all available services provided by recyclers?

Reverse vending machines have been developed by the aluminum industry. Some recyclers have multi-bin trucks available to ensure material separation during collection. For further information, contact local recycling contractors and local and state governments.

Q How can you encourage employee participation in your recycling program?

Encouraging participation to increase the amount of recovered materials can be the greatest challenge to any recycling program. You might try the following ways to increase recovery and participation:

- Ensure that all employees understand the program. Schedule an education seminar for management, employees, and maintenance staff.
- Hang posters, send memos, and conduct meetings in the office that explain the program's operating procedures.
- Provide special containers for recycling and clearly mark and label them with recycling do's and don'ts.
- Start an incentive program and give awards or recognition to employees for their recycling effort.

Q How can you encourage user and visitor cooperation in your recycling program?

In the case of parks and recreational facilities, concession stands, and other facilities used by the public, managers must tailor their source reduction and recycling programs to two different populations: facility employees and the visiting public, who may dispose of wastes at the facility.

As a manager, you need to be aware of the different strategies available to you to encourage the public's cooperation. In many cases, recycling programs can be geared directly to facility visitors and users. Remember that it is often necessary to "sell" the program to the public. To encourage their participation:

- Inform visitors about your recycling and waste reduction program and explain its importance in preserving the environment.
- Develop and display eye-catching posters and other promotional material to stimulate interest in recycling.
- Keep recycling collection stations clean. If the area appears dirty, visitors will not bring their recyclables.
- Let visitors and users know that you appreciate their cooperation.

If it is not possible to establish a recycling program at your facility, incorporate the outreach strategies above to educate visitors about recycling and encourage them to recycle in their homes and communities.

CLOSING THE LOOP

Q Have you researched potential markets for recyclable materials?

Contact potential recycling markets to determine prices and available services. Learn about restrictions on contaminants and establish an acceptable schedule for pick-up. Seek outside technical assistance from waste haulers, local and state government, and local recycling businesses to help you with terminology, markets, and pricing.

Q Does your facility purchase recycled materials?

When practical and cost effective, procure recycled and recyclable products instead of items composed of non-recycled materials. If your facility must purchase plastic, seek out those plastic materials that can be recycled. Consult vendor catalogs to determine the availability of recycled and reusable products.

Further, establish procurement contracts that require vendors to supply recycled products (e.g., paper, tires, batteries, cardboard, wood products, etc.). You might also establish contracts that require vendors to purchase back spent packaging materials and containers (wood pallets, empty drums, cardboard boxes and crates, etc.).

EMPLOYEE PARTICIPATION

Q Do you have an employee incentive program to promote pollution prevention?

The key to any pollution prevention effort is employee participation. Training and educational programs can inform employees about pollution prevention concepts. Public recognition, awards programs, and a suggestion box can also encourage participation.

RECYCLE!

Food Services/Convenience Stores Recycling Checklist

We are recycling in order to conserve natural resources and protect the environment.

Please recycle the following materials:

- ☐ Glass
- ☐ Newspaper
- ☐ Corrugated cardboard
- ☐ Aluminum
- ☐ Plastic
- ☐ Tin and bi-metal cans
- ☐ Food waste
- ☐ Office paper
- ☐ Wooden pallets

Don't throw these recyclables in the regular trash. They should be put in the special recycling container. Recycling containers are located at _____.

The recycling coordinator is _____

Never mix different recyclable materials in the recycling containers.

Do not let excess recyclable materials accumulate at container areas.

Talk to your manager or the recycling coordinator about new ideas for pollution prevention and waste reduction.